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<u>L4</u>	L3	0	<u>L4</u>
	DB=PGPB,USPT; PLUR=YES; OP=OR		
	((calculate or calculating or calculated or calculation) same (normal adj vector)		
<u>L3</u>	same (order adj equation) same better same (approximate or approximating or approximated or estimate or estimating or estimated or estimation or approximation))	0	<u>L3</u>
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<u>L2</u>	same (order adj equation))	0	<u>L2</u>

09/585,217

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2 L1

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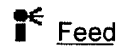
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Results 1 - 20 of 116

Result page: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [next](#)**1 [A Survey of Methods of Computing Minimax and Near-Minimax Polynomial Approximations](#)**

W. Fraser

July 1965

Journal of the ACM (JACM), Volume 12 Issue 3Full text available: [pdf\(1.20 MB\)](#)Additional Information: [full citation](#), [abstract](#), [referenc](#)

Methods are described for the derivation of minimax and near-minimax polynomial approximations both analytically defined functions and functions defined by a table of values. For near-minimax ap Fourier-Chebyshev expansion are first described. These consist of the rearrangement of the coeffic the coefficients from t ...

2 [Calculating approximate curve arrangements using rounded arithmetic](#)

V. Milenkovic

June 1989

Proceedings of the fifth annual symposium on Computational geometryFull text available: [pdf\(1.13 MB\)](#)Additional Information: [full citation](#), [abstract](#), [referenc](#)

We present here an algorithm for the curve arrangement problem: determine how a set of planar c arithmetic and generates an approximate result. It can be applied to a broad class of planar curves arrangements. This result is an important step towards the creation of practical computer program

3 [Contour tracing by piecewise linear approximations](#)

David P. Dobkin, Allan R. Wilks, Silvio V. F. Levy, William P. Thurston

October 1990

ACM Transactions on Graphics (TOG), Volume 9 Issue 4Full text available: [pdf\(2.74 MB\)](#)Additional Information: [full citation](#), [abstract](#), [referenc](#)

We present a method for tracing a curve that is represented as the contour of a function in Euclide following the intersections of the contour with the facets of a triangulation of space. The algorithm it accumulates essentially no round-off error and has a well-defined integer test for detecting a loo particular c ...

4 [Kernel independent component analysis](#)

Francis R. Bach, Michael I. Jordan

March 2003

The Journal of Machine Learning Research, Volume 3Full text available: [pdf\(561.46 KB\)](#)Additional Information: [full citation](#), [abstract](#), [referenc](#)

We present a class of algorithms for independent component analysis (ICA) which use contrast fun Hilbert space. On the one hand, we show that our contrast functions are related to mutual informa of statistical dependence. On the other hand, building on recent developments in kernel methods,

● 09/585,217 ●

computed efficiently. Minimizi ...

Keywords: Stiefel manifold, blind source separation, canonical correlations, gram matrices, incom analysis, integral equations, kernel methods, mutual information, semiparametric models

5 Direct construction of polynomial surfaces from dense range images through region growing

Nickolas S. Sapidis, Paul J. Besl

April 1995 **ACM Transactions on Graphics (TOG)**, Volume 14 Issue 2

Full text available:  [pdf\(7.89 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

6 Technical reports

SIGACT News Staff

January 1980 **ACM SIGACT News**, Volume 12 Issue 1

Full text available:  [pdf\(5.28 MB\)](#)

Additional Information: [full citation](#)

7 The design of MA48: a code for the direct solution of sparse unsymmetric linear systems of e

I. S. Duff, J. K. Reid

June 1996 **ACM Transactions on Mathematical Software (TOMS)**, Volume 22 Issue 2

Full text available:  [pdf\(464.25 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [referenc](#)

We describe the design of a new code for the direct solution of sparse unsymmetric linear systems the symbolic and numerical phases, which increases speed and saves storage without sacrifice of n matrix processing in all phases of the computation enabling the use of all three levels of BLAS, tre factorization, and i ...

Keywords: BLAS, Gaussian elimination, block triangular form, error estimation, sparse unsymmet

8 Adaptive selectivity estimation using query feedback

Chungmin Melvin Chen, Nick Roussopoulos

May 1994 **ACM SIGMOD Record , Proceedings of the 1994 ACM SIGMOD international**

Full text available:  [pdf\(1.12 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [referenc](#)

In this paper, we propose a novel approach for estimating the record selectivities of database quer approximated by a curve-fitting function using a query feedback mechanism. This approach has th for gathering statistics and of being able to continuously adapt the value distribution through quer estimation accuracy of this appro ...

9 How to use expert advice

Nicolò Cesa-Bianchi, Yoav Freund, David Haussler, David P. Helmbold, Robert E. Schapire, Manfred K

May 1997 **Journal of the ACM (JACM)**, Volume 44 Issue 3

Full text available:  [pdf\(699.55 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [referenc](#)

We analyze algorithms that predict a binary value by combining the predictions of several predictio situations, i.e., we make no assumptions about the way the sequence of bits to be predicted is gen difference between the expected number of mistakes it makes on the bit sequence and the expect sequence, w ...

Keywords: algorithms

09/585,217

10 Estimating business targets

Piew Datta, James H. Drew, Andrew Betz, D. R. Mani, Jeffery Howard

August 2001

Proceedings of the seventh ACM SIGKDD international conference on Know

Full text available:  [pdf\(528.76 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [referenc](#)

Determining and setting maximal revenue expectations or other business performance targets---w customers---can have profound financial implications. Operational techniques are changed, staffing -all in the name of expectations. In practice these expectations are often derived in an ad hoc man neighbor methods and classical s ...

Keywords: Nearest neighbor, frontier analysis, maximal value estimation

11 Initial Value Routines in the NAG Library

Ian Gladwell

December 1979 **ACM Transactions on Mathematical Software (TOMS)**, Volume 5 Issue 4


Full text available:  [pdf\(1.16 MB\)](#)

Additional Information: [full citation](#), [references](#), [citings](#), [index](#)

12 Automatic Solution of the Sturm-Liouville Problem

P. B. Bailey, M. K. Gordon, L. F. Shampine

September 1978 **ACM Transactions on Mathematical Software (TOMS)**, Volume 4 Issue 3

Full text available:  [pdf\(1.10 MB\)](#)

Additional Information: [full citation](#), [references](#), [citings](#), [ind](#)

13 Rendering: Implicit linear interval estimations

Katja Bühler

April 2002

Proceedings of the 18th spring conference on Computer graphics

Full text available:  [pdf\(877.89 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [referenc](#)

Visualization and collision detection are two of the most important problems connected with implic or as preprocessing step for many algorithms solving these problems. In general, enumeration alg to encounter those parts in space, where the object might be located. But the bad performance an precision is required, are g ...

Keywords: affine arithmetic, collision detection, enumeration, implicit curves, implicit surfaces, in

14 Handling floating-point exceptions in numeric programs

John R. Hauser

March 1996

ACM Transactions on Programming Languages and Systems (TOPLAS), Volu

Full text available:  [pdf\(350.66 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [referenc](#)

There are a number of schemes for handling arithmetic exceptions that can be used to improve the Overflow and underflow are the most troublesome exceptions, and depending on the context in wh (1) through a "brute force" reevaluation with extended range, (2) by reevaluating using a techniqu

Keywords: arithmetic, exception handling, floating-point

15 Evaluating message understanding systems: an analysis of the third message understanding

Nancy Chinchor, David D. Lewis, Lynette Hirschman

September 1993 **Computational Linguistics**, Volume 19 Issue 3

09/585,217

Full text available:  pdf(3.00 MB)  Publisher Site

Additional Information: [full citation](#), [abstract](#), [referenc](#)

This paper describes and analyzes the results of the Third Message Understanding Conference (MU conference, summarizes the participating systems, discusses issues of measuring system effective critical look at the evaluation in terms of the lessons learned. One of the common problems with e unknown. In the disc ...

16 An empirical evaluation of several methods to select the best system

Koichiro Inoue, Stephen E. Chick, Chun-Hung Chen

October 1999 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, Volume

Full text available:  pdf(199.74 KB)

Additional Information: [full citation](#), [abstract](#), [referenc](#)


Simulation is an important tool for comparing the performance of several alternative systems. The select the best system, where best is defined by the maximum or minimum expected simulation ou sequential procedures that represent three structurally different modeling methodologies for alloca we evaluate them empiric ...

Keywords: discrete-event simulation, multiple selection procedures, ranking and selection

17 On computing condition numbers for the nonsymmetric eigenproblem

Z. Bai, James Demmel, A. McKenney

June 1993 **ACM Transactions on Mathematical Software (TOMS)**, Volume 19 Issue 2

Full text available:  pdf(1.35 MB)

Additional Information: [full citation](#), [abstract](#), [referenc](#)

We review the theory of condition numbers for the nonsymmetric eigenproblem and give a tabular eigenvalues, eigenvectors, invariant subspaces, and related quantities. We describe the design of n Fortran subroutines implementing these algorithms are in the LAPACK library [1].

Keywords: LAPACK, Schur decomposition, Sylvester equation, condition numbers, invariant subsp

18 Building efficient and effective metasearch engines

Weiyi Meng, Clement Yu, King-Lup Liu

March 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 1

Full text available:  pdf(416.07 KB)

Additional Information: [full citation](#), [abstract](#), [referenc](#)


Frequently a user's information needs are stored in the databases of multiple search engines. It is multiple search engines and identify useful documents from the returned results. To support unifie be constructed. When a metasearch engine receives a query from a user, it invokes the underlying Metasearch engines have ...

Keywords: Collection fusion, distributed collection, distributed information retrieval, information r

19 Error Analysis of Direct Methods of Matrix Inversion

J. H. Wilkinson

July 1961 **Journal of the ACM (JACM)**, Volume 8 Issue 3

Full text available:  pdf(1.92 MB)

Additional Information: [full citation](#), [references](#), [citing](#), [index terms](#)

20 A Status Report on Computing Algorithms for Mathematical Programming

William W. White

September 1973 **ACM Computing Surveys (CSUR)**, Volume 5 Issue 3

09/585,217




Full text available:  pdf(3.02 MB)

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vector **PARAGRAPH** **order** **equation**

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Result page: [1](#) [2](#) [3](#) [next](#)1 [Initial Value Routines in the NAG Library](#)

Ian Gladwell

December 1979 **ACM Transactions on Mathematical Software (TOMS)**, Volume 5 Issue 4Full text available: [pdf\(1.16 MB\)](#)Additional Information: [full citation](#), [references](#), [citations](#), [index](#)2 [Interpolation with interval and point tension controls using cubic weighted v-splines](#)

Thomas A. Foley

March 1987 **ACM Transactions on Mathematical Software (TOMS)**, Volume 13 Issue 1Full text available: [pdf\(1.86 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

Various methods have been developed to control the shape of an interpolating curve for computer better suited for controlling the tension of the curve on an interval, while others are better suited for interpolation points. The weighted v-spline is a C1 piecewise cubic polynomial interpolant that generates and ...

3 [A Survey of Methods of Computing Minimax and Near-Minimax Polynomial Approximations for Variable](#)

W. Fraser

July 1965 **Journal of the ACM (JACM)**, Volume 12 Issue 3Full text available: [pdf\(1.20 MB\)](#)Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

Methods are described for the derivation of minimax and near-minimax polynomial approximations considered for both analytically defined functions and functions defined by a table of values. For determining the coefficients of the Fourier-Chebyshev expansion are first described. These consist of a power polynomial, and also direct determination of the coefficients from the ...

4 [Stylized rendering techniques for scalable real-time 3D animation](#)

Adam Lake, Carl Marshall, Mark Harris, Marc Blackstein

June 2000 **Proceedings of the 1st international symposium on Non-photorealistic animation**Full text available: [pdf\(2.25 MB\)](#)Additional Information: [full citation](#), [references](#), [citations](#), [index](#)

Keywords: cartoon effects, cartoon rendering, pencil sketch rendering, real-time nonphotorealistic detection, stylized rendering


09/585,217

5 Pareto-optimal formulations for cost versus colorimetric accuracy trade-offs in printer color m

D. J. Littlewood, P. A. Drakopoulos, G. Subbarayan

April 2002

ACM Transactions on Graphics (TOG), Volume 21 Issue 2

Full text available:  [pdf\(9.84 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [ind](#)

Color management for the printing of digital images is a challenging task, due primarily to nonlinear redundant solutions for print devices with more than three inks. Algorithms for the conversion of images typically designed to achieve a single predetermined rendering intent, such as colorimetric accuracy to CMYK color conversion schemes based on a general Pareto-optimal formul ...


Keywords: Artificial Neural Networks, CMYK, Color Conversion, Color Fidelity, Color Management, Transformation, Optimization, Pareto-optimization, Tetrahedral Interpolation

6 The singular value decomposition for polynomial systems

Robert M. Corless, Patrizia M. Gianni, Barry M. Trager, Stephen M. Watt

April 1995

Proceedings of the 1995 international symposium on Symbolic and algebraic co

Full text available:  [pdf\(1.50 MB\)](#)


Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

7 An interactive computer graphics approach to surface representation

Sheng-Chuan Wu, John F. Abel, Donald P. Greenberg

October 1977

Communications of the ACM, Volume 20 Issue 10

Full text available:  [pdf\(1.27 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

An interactive computer graphics method has been developed for the rapid generation of arbitrary method is a synthesis of spline theory and algorithms, an interactive means for man-machine computer graphics display. The basic technique employed is a modified lofting method in which sectional curves the surface is interpolated between sections by Cardinal splines. Among them ...

Keywords: computer graphics, finite element input methods, lofting, splines, three-dimensional surfaces

8 Rendering: An XML-based visual shading language for vertex and fragment shaders

Frank Goetz, Ralf Borau, Gitta Domik

April 2004

Proceedings of the ninth international conference on 3D Web technology

Full text available:  [pdf\(570.33 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [ind](#)

This paper presents a new system for the visual development of complex vertex and fragment shader advantages of visual programming languages. The core of the system is a Java program. With this diagrams that describe the functionality of OpenGL ARB vertex and fragment programs. To get a rendered and shaded scenes immediately. The rendering of these three dimensional scenes ...


Keywords: Extensible 3D (X3D), Extensible Markup Language (XML), dataflow programming, fragment shader, visual programming

9 A Status Report on Computing Algorithms for Mathematical Programming

William W. White

September 1973

ACM Computing Surveys (CSUR), Volume 5 Issue 3

Full text available:  [pdf\(3.02 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [inde](#)


89/585,217

10 Image-driven simplification

Peter Lindstrom, Greg Turk

July 2000

ACM Transactions on Graphics (TOG), Volume 19 Issue 3

Full text available:  [pdf\(1.98 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

We introduce the notion of image-driven simplification, a framework that uses images to decide wh departure from approaches that make polygonal simplification decisions based on geometry. As wi operator to make incremental changes to a model. Unique to our approach, however, is the use at model against those of a simplified model to determine the ...


Keywords: image metrics, level-of-detail, polygonal simplification, visual perception

11 Contour tracing by piecewise linear approximations

David P. Dobkin, Allan R. Wilks, Silvio V. F. Levy, William P. Thurston

October 1990

ACM Transactions on Graphics (TOG), Volume 9 Issue 4

Full text available:  [pdf\(2.74 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)


We present a method for tracing a curve that is represented as the contour of a function in Euclide proceeds locally by following the intersections of the contour with the facets of a triangulation of sp presence of high curvature of the contour; it accumulates essentially no round-off error and has a In developing the algorithm, we explore the nature of a particular c ...

12 Pen computing: a technology overview and a vision

André Meyer

July 1995

ACM SIGCHI Bulletin, Volume 27 Issue 3

Full text available:  [pdf\(5.14 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [citi](#)ngs, [index te](#)

This work gives an overview of a new technology that is attracting growing interest in public as we difference from other technologies is in the use of a pen or pencil as the primary means of interact the familiar pen and paper interface metaphor. From this follows a set of consequences that will be emerging technologies and visions.Starting with a short historic ...

13 Direct construction of polynomial surfaces from dense range images through region growing

Nickolas S. Sapidis, Paul J. Besl

April 1995

ACM Transactions on Graphics (TOG), Volume 14 Issue 2

Full text available:  [pdf\(7.89 MB\)](#)

Additional Information: [full citation](#), [references](#), [citi](#)ngs, [index terms](#)

14 Solution of Ordinary Differential Equations Using Two ``Off-Step" Points

D. G. Brush, J. J. Kohfeld, G. T. Thompson

October 1967

Journal of the ACM (JACM), Volume 14 Issue 4

Full text available:  [pdf\(994.30 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [ind](#)

In a previous paper the authors suggested that the accurate correctors proposed by Gragg and Ste should be accompanied by similar predictors. In each method in that paper the corrector and one o the interval of integration. In the present paper a corrector is dealt with in which two "nonstep" po the authors have "balanced&rd ...

15 Real-time simulation of dust behavior generated by a fast traveling vehicle

Jim X. Chen, Xiadong Fu, J. Wegman


April 1999

ACM Transactions on Modeling and Computer Simulation (TOMACS), Volume 9

Full text available:

Additional Information:

09/585,217

 pdf(1.01 MB)[full citation](#), [abstract](#), [references](#), [ind](#)

Simulation of physically realistic complex dust behavior is very useful in training, education, art, and published models for real-time simulation of dust behavior generated by a traveling vehicle. In this fluid dynamics, and behavioral simulation techniques to simulate dust behavior in real time. First, dust generation and the behavior after dust particles are ...

Keywords: computational fluid dynamics, particle systems, physically-based modeling, real-time

16 Algorithm 742: L2CXFT: a Fortran subroutine for least-squares data fitting with nonnegative

I. C. Demetriou

March 1995

ACM Transactions on Mathematical Software (TOMS), Volume 21 Issue 1

Full text available:  pdf(805.07 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

A Fortran subroutine applies the method of Demetriou and Powell [1991] to restore convexity in n contaminated by random errors. The method minimizes the sum of the squares of the errors, subject differences, in two phases. First, an approximation close to the optimum is derived in $O(n)$ operations starting point of a dual-feasible quadratic programming algorithm that ...

Keywords: B-splines, convex approximation, data fitting, divided difference

17 Simulation, motion capture, editing: Footskate cleanup for motion capture editing

Lucas Kovar, John Schreiner, Michael Gleicher

July 2002

Proceedings of the 2002 ACM SIGGRAPH/Eurographics symposium on Comp

Full text available:  pdf(332.53 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

While motion capture is commonplace in character animation, often the raw motion data itself is noisy and then edited to satisfy the particular demands of the animation. This process can introduce an distracting artifact is when the character's feet move when they ought to remain planted, a condition present a simple, efficient algorithm for removing footskate. Our algorithm ...

Keywords: inverse kinematics, motion capture, motion editing

18 Motion graphs

Lucas Kovar, Michael Gleicher, Frédéric Pighin

July 2002

ACM Transactions on Graphics (TOG) , Proceedings of the 29th annual conference on interactive techniques, Volume 21 Issue 3

Full text available:  pdf(860.67 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

In this paper we present a novel method for creating realistic, controllable motion. Given a corpus of motion, we construct a directed graph called a *motion graph* that encapsulates connections among the data. The original motion and automatically generated transitions. Motion can be generated simply by building a framework for extracting particular graph walks that meet a user's ...

Keywords: animation with constraints, motion capture, motion synthesis

19 An Automatic Program for Linear Fredholm Integral Equations of the Second Kind

Kendall Atkinson

June 1976

ACM Transactions on Mathematical Software (TOMS), Volume 2 Issue 2

Full text available:  pdf(925.82 KB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

09/585,217

20 How to use expert advice

Nicolò Cesa-Bianchi, Yoav Freund, David Haussler, David P. Helmbold, Robert E. Schapire, Manfred K. Warmuth
May 1997 **Journal of the ACM (JACM)**, Volume 44 Issue 3

Full text available:  [pdf\(699.55 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We analyze algorithms that predict a binary value by combining the predictions of several predictors. In the worst-case situations, i.e., we make no assumptions about the way the sequence of bits to be predicted evolves, we analyze the performance of the algorithm by the difference between the expected number of mistakes it makes and the number of mistakes made by the best expert on this sequence, with respect to the worst-case sequence.

Keywords: algorithms

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vector **PARAGRAPH** **order equation** AND **lighting**

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1 [Initial Value Routines in the NAG Library](#)

Ian Gladwell

December 1979 **ACM Transactions on Mathematical Software (TOMS)**, Volume 5 Issue 4

Full text available: [pdf\(1.16 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index](#)

2 [Rendering: An XML-based visual shading language for vertex and fragment shaders](#)

Frank Goetz, Ralf Borau, Gitta Domik

April 2004

Proceedings of the ninth international conference on 3D Web technology

Full text available: [pdf\(570.33 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [ind](#)

This paper presents a new system for the visual development of complex vertex and fragment sha advantages of visual programming languages. The core of the system is a Java program. With this diagrams that describe the functionality of OpenGL ARB vertex and fragment programs. To get a g rendered and shaded scenes immediately. The rendering of these three dimensional scenes ...

Keywords: Extensible 3D (X3D), Extensible Markup Language (XML), dataflow programming, frag shader, visual programming

3 [Stylized rendering techniques for scalable real-time 3D animation](#)

Adam Lake, Carl Marshall, Mark Harris, Marc Blackstein

June 2000

Proceedings of the 1st international symposium on Non-photorealistic anim

Full text available: [pdf\(2.25 MB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [inde](#)

Keywords: cartoon effects, cartoon rendering, pencil sketch rendering, real-time nonphotorealisti detection, stylized rendering

4 [Pareto-optimal formulations for cost versus colorimetric accuracy trade-offs in printer color m](#)

D. J. Littlewood, P. A. Drakopoulos, G. Subbarayan

April 2002

ACM Transactions on Graphics (TOG), Volume 21 Issue 2

Full text available: [pdf\(9.84 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [ind](#)

09/585,217


Color management for the printing of digital images is a challenging task, due primarily to nonlinear redundant solutions for print devices with more than three inks. Algorithms for the conversion of images are typically designed to achieve a single predetermined rendering intent, such as colorimetric accuracy to CMYK color conversion schemes based on a general Pareto-optimal formulation ...

Keywords: Artificial Neural Networks, CMYK, Color Conversion, Color Fidelity, Color Management, Transformation, Optimization, Pareto-optimization, Tetrahedral Interpolation

5 The singular value decomposition for polynomial systems

Robert M. Corless, Patrizia M. Gianni, Barry M. Trager, Stephen M. Watt

April 1995 **Proceedings of the 1995 international symposium on Symbolic and algebraic computation**

Full text available:  pdf(1.50 MB)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

6 Image-driven simplification

Peter Lindstrom, Greg Turk

July 2000 **ACM Transactions on Graphics (TOG)**, Volume 19 Issue 3

Full text available:  pdf(1.98 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We introduce the notion of image-driven simplification, a framework that uses images to decide when to depart from approaches that make polygonal simplification decisions based on geometry. As we interact with the model, the operator makes incremental changes to a model. Unique to our approach, however, is the use of a model against those of a simplified model to determine the ...

Keywords: image metrics, level-of-detail, polygonal simplification, visual perception

7 Pen computing: a technology overview and a vision

André Meyer

July 1995 **ACM SIGCHI Bulletin**, Volume 27 Issue 3

Full text available:  pdf(5.14 MB)

Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

This work gives an overview of a new technology that is attracting growing interest in public as we see a difference from other technologies is in the use of a pen or pencil as the primary means of interacting with the familiar pen and paper interface metaphor. From this follows a set of consequences that will be emerging technologies and visions. Starting with a short historic ...

8 Contour tracing by piecewise linear approximations

David P. Dobkin, Allan R. Wilks, Silvio V. F. Levy, William P. Thurston

October 1990 **ACM Transactions on Graphics (TOG)**, Volume 9 Issue 4

Full text available:  pdf(2.74 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

We present a method for tracing a curve that is represented as the contour of a function in Euclidean space. The algorithm proceeds locally by following the intersections of the contour with the facets of a triangulation of space. In the presence of high curvature of the contour, it accumulates essentially no round-off error and has a bounded error. In developing the algorithm, we explore the nature of a particular class of curves ...

9 Real-time simulation of dust behavior generated by a fast traveling vehicle

Jim X. Chen, Xiadong Fu, J. Wegman

April 1999 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, Volume 9

Full text available:  pdf(1.01 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Simulation of physically realistic complex dust behavior is very useful in training, education, art, and engineering. Published models for real-time simulation of dust behavior generated by a traveling vehicle. In this ...

09/585,217

fluid dynamics, and behavioral simulation techniques to simulate dust behavior in real time. First, dust generation and the behavior after dust particles ar ...

Keywords: computational fluid dynamics, particle systems, physically-based modeling, real-time

10 Simulation, motion capture, editing: Footskate cleanup for motion capture editing

Lucas Kovar, John Schreiner, Michael Gleicher

July 2002

Proceedings of the 2002 ACM SIGGRAPH/Eurographics symposium on Comp

Full text available:  pdf(332.53 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

While motion capture is commonplace in character animation, often the raw motion data itself is n and then edited to satisfy the particular demands of the animation. This process can introduce arti distracting artifact is when the character's feet move when they ought to remain planted, a conditi present a simple, efficient algorithm for removing footskate. Our algorithm ...

Keywords: inverse kinematics, motion capture, motion editing

11 Motion graphs

Lucas Kovar, Michael Gleicher, Frédéric Pighin

July 2002

ACM Transactions on Graphics (TOG) , Proceedings of the 29th annual confe interactive techniques, Volume 21 Issue 3

Full text available:  pdf(860.67 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

In this paper we present a novel method for creating realistic, controllable motion. Given a corpus construct a directed graph called a *motion graph* that encapsulates connections among the databa original motion and automatically generated transitions. Motion can be generated simply by buildin framework for extracting particular graph walks that meet a user's s ...

Keywords: animation with constraints, motion capture, motion synthesis

12 Texture mapping: Adaptive texture maps

Martin Kraus, Thomas Ertl

September 2002

Proceedings of the ACM SIGGRAPH/EUROGRAPHICS conference on Graphics

Full text available:  pdf(2.13 MB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

We introduce several new variants of hardware-based adaptive texture maps and present applicati particular, we discuss representations of images and volumes with locally adaptive resolution, loss quantization of volume data. All corresponding texture decoders were successfully integrated into commercial off-the-shelf graphics hardware.

13 How to use expert advice

Nicolò Cesa-Bianchi, Yoav Freund, David Haussler, David P. Helmbold, Robert E. Schapire, Manfred K

May 1997

Journal of the ACM (JACM), Volume 44 Issue 3

Full text available:  pdf(699.55 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

We analyze algorithms that predict a binary value by combining the predictions of several predictio worst-case situations, i.e., we make no assumptions about the way the sequence of bits to be pred performance of the algorithm by the difference between the expected number of mistakes it make of mistakes made by the best expert on this sequence, w ...


Keywords: algorithms

09/585,217

14 A personal view of the personal work station: some firsts in the Fifties

Douglas Ross

January 1986 **Proceedings of the ACM Conference on The history of personal workstations**

Full text available:  [pdf\(4.26 MB\)](#)

Additional Information: [full citation](#), [references](#), [index terms](#)

15 Retrospectives II: the early years in computer graphics at MIT, Lincoln Lab, andd Harvard

J. Hurst, M. S. Mahoney, J. T. Gilmore, L. G. Roberts, R. Forrest

July 1989 **ACM SIGGRAPH Computer Graphics , ACM SIGGRAPH 89 Panel Proceedings**, Volu

Full text available:  [pdf\(7.40 MB\)](#)

Additional Information: [full citation](#), [index terms](#)

16 Tellegen's principle into practice

A. Bostan, G. Lecerf, É. Schost

August 2003 **Proceedings of the 2003 international symposium on Symbolic and algebraic**

Full text available:  [pdf\(259.35 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [ind](#)


The transposition principle, also called Tellegen's principle, is a set of transformation rules for linea used systematically, and few practical implementations rely on it. In this article, we propose explic multiplication and division but also new faster algorithms for multipoint evaluation, interpolation an implementation in Shoup's NTL C++ library.

Keywords: Tellegen's principle, computer algebra, interpolation, polynomial evaluation, transposi

17 Height distributional distance transform methods for height field ray tracing

David W. Paglieroni, Sidney M. Petersen

October 1994 **ACM Transactions on Graphics (TOG)**, Volume 13 Issue 4

Full text available:  [pdf\(2.36 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citi](#)

Height distributional distance transform (HDDT) methods are introduced as a new class of method utilize results of height field preprocessing. The preprocessing involves computing a height field tra volumes of empty space above the height field surface that are as wide as possible. There is one c above each height field cell. Various height field transforms of th ...

Keywords: distance transform, height field, hierarchical methods, incremental methods, paramet HDDT methods, ray tracing, terrain

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Last Name = VLACHOS

First Name = ALEXANDER

Application#	Patent#	Status	Date Filed	Title	Inventor Name 2
<u>09852808</u>	Not Issued	041	05/10/2001	METHOD AND APPARATUS FOR PROCESSING NON-PLANAR VIDEO GRAPHICS PRIMITIVES	VLACHOS, ALEXANDER C.
<u>09585217</u>	Not Issued	071	06/01/2000	METHOD AND APPARATUS FOR TESSELLATION LIGHTING	VLACHOS, ALEXANDER C.

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Last Name = GOEL

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Application#	Patent#	Status	Date Filed	Title	Inventor Name 13
<u>10790952</u>	Not Issued	020	03/02/2004	METHOD AND APPARATUS FOR DUAL PASS ADAPTIVE TESSELLATION	GOEL, VINEET
<u>10328962</u>	Not Issued	041	12/24/2002	PIXEL ENGINE	GOEL, VINEET
<u>10304292</u>	Not Issued	030	11/26/2002	PIXEL ENGINE	GOEL, VINEET
<u>10287143</u>	Not Issued	030	11/04/2002	METHOD AND APPARATUS FOR TRIANGLE TESSELLATION	GOEL, VINEET
<u>09978973</u>	<u>6518974</u>	150	10/16/2001	PIXEL ENGINE	GOEL, VINEET
<u>09853840</u>	<u>6664960</u>	150	05/10/2001	APPARATUS FOR PROCESSING NON-PLANAR VIDEO GRAPHICS PRIMITIVES AND ASSOCIATED METHOD OF OPERATION	GOEL, VINEET
<u>09852808</u>	Not Issued	041	05/10/2001	METHOD AND APPARATUS FOR PROCESSING NON-PLANAR VIDEO GRAPHICS PRIMITIVES	GOEL, VINEET
<u>09585217</u>	Not Issued	071	06/01/2000	METHOD AND APPARATUS FOR TESSELLATION LIGHTING	GOEL, VINEET
<u>08921918</u>	<u>6211883</u>	150	08/27/1997	A PATCH-FLATNESS TEST UNIT FOR HIGH ORDER RATIONAL SURFACE PATCH RENDERING SYSTEMS	GOEL , VINEET
<u>08921917</u>	<u>6100894</u>	150	08/27/1997	PATCH-DIVISION UNIT FOR HIGH-ORDER SURFACE PATCH RENDERING SYSTEMS	GOEL , VINEET
<u>08921916</u>	<u>6057848</u>	150	08/27/1997	SYSTEM FOR RENDERING	GOEL , VINEET

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				HIGH ORDER RATIONAL SURFACE PATCHES	
<u>08835501</u>	<u>5995109</u>	150	04/08/1997	METHOD FOR RENDERING HIGH ORDER RATIONAL SURFACE PATCHES	GOEL , VINEET
<u>08810256</u>	<u>5999188</u>	150	03/03/1997	SYSTEM AND METHOD FOR PARAMETRIC SURFACE REPRESENTATION FROM POLYGONAL DESCRIPTIONS OF ARBITRARY OBJECTS	GOEL , VINEET

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